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**United States Patent** [19]**Perricone**[11] **Patent Number:** **5,643,586**[45] **Date of Patent:** **Jul. 1, 1997**

[54] **TOPICAL COMPOSITIONS AND METHODS FOR TREATMENT OF SKIN DAMAGE AND AGING USING CATECHOLAMINES AND RELATED COMPOUNDS**

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**Related U.S. Application Data**

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[51] **Int. Cl.<sup>6</sup>** ..... **A61K 7/48**

[52] **U.S. Cl.** ..... **424/401; 514/944; 424/DIG. 5**

[58] **Field of Search** ..... **424/401; 514/944, 514/DIG. 5**

[56] **References Cited**

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[57] **ABSTRACT**

Compositions for the topical treatment of sagging subcutaneous muscle and overlying cutaneous tissue contain catecholamines and/or related compounds in a dermatologically acceptable carrier. Exemplary catecholamines include adrenaline, norepinephrine, dopamine and their precursors; catecholamine precursors such as tyrosine and phenylalanine are preferred. Preferred embodiments further contain at least one other ingredient that enhances neurotransmitter synthesis and/or skin penetration. In some embodiments, an acetylcholine precursor such as dimethylaminoethanol and/or a fatty acid ester of ascorbic acid are included in the formulation. In these and other embodiments, particularly those employing tyrosine and/or phenylalanine as a catecholamine precursor, other cofactors such as vitamin B<sub>6</sub> and pantothenic acid or calcium pantothenate are included in the composition to enhance the action of the active ingredients. Other compounds that scavenge free radicals and antioxidants may also be added.

**17 Claims, No Drawings**